

MICHIGAN DEPARTMENT OF LABOR AND ECONOMIC GROWTH

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

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These rules become effective 14 days after filing with the Secretary of State

(By authority conferred on the director of the department of labor and economic growth by sections 16 and 21 of 1974 PA 154, and Executive Reorganization Order Nos. 1996-2 and 2003-1, MCL 408.1016, 408.1021, 445.2001, and 445.2011)

R 408.10803, R 408.10811, R 408.10813, R408.10822, and R 408.10836 of the Michigan Administrative Code are amended, and R 408.10807 and R 408.10826 are added to the code as follows:

## **PART 8 PORTABLE FIRE EXTINGUISHERS**

R 408.10803. Definitions; A to C.

Rule 803. (1) "Approved label" means a label or other identifying mark of a nationally recognized testing laboratory such as underwriters' laboratories, incorporated, factory mutual research corporation, or underwriters' laboratories of Canada that maintains a periodic inspection of production of labeled fire equipment or materials and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.

(2) "Class "A" fire" means a fire that has as its fuel ordinary combustible material such as wood, cloth, paper, rubber, and many plastics.

(3) "Class "B" fire" means a fire that has as its fuel flammable liquids, gases, or greases.

(4) "Class "C" fire" means a fire that involves energized electrical equipment where the nonconductivity of the extinguishing agent is necessary to prevent shock. The fuel consumed by a class "C" fire will be classed as A, B, or D.

(5) "Class "D" fire" means a fire that involves the oxidation reaction of combustible metals such as magnesium, titanium, zirconium, sodium, or potassium.

**(6) "Class "K" fire" means a fire in cooking appliances that involve combustible vegetable or animal oils and fats.**

R 408.10807 Obtaining referenced standards.

Rule 807. (1) The following referenced standards are available for review at the offices of the Michigan department of labor and economic growth, MIOSHA Standards Section, 7150 Harris Drive, Lansing, Michigan 48909-8143, and are available as follows:

(a) The Code of Federal Regulations, Title 49, Transportation, Part 100 to 185, 2004 edition, stock number: 869-052-00203-8 and The Code of Federal Regulations, Title 49, Transportation, Part 186 to 199, 2004 edition, stock number: 869-052-00204-6, may be obtained from the U.S. Government Printing Office, Washington DC, 20402; telephone number: 888-293-6498; or via the internet at website: <http://bookstore.gpo.gov>; at a cost, as of the time of adoption of these rules of \$63.00 and \$23.00, respectively.

September 27, 2005

(b) The Michigan Occupational Safety and Health General Industry Safety Standard Part 9 “Fixed Fire Equipment,” being R 408.10921 et seq., may be obtained from the Michigan department of labor and economic growth, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48908-8143 or via the internet at website: [www.michigan.gov/mioshastandards](http://www.michigan.gov/mioshastandards). Up to 5 copies are available at no charge, for quantities greater than 5, the cost is 4 cents per page.

R 408.10811. Classification.

Rule 811. (1) An extinguisher shall be classified by suitability for a class of fire as defined in ~~rule R 408.10803~~ and rated for extinguishing capability.

(2) The classification shall consist of a letter which indicates the class of fire on which the extinguisher has been found effective, preceded by a rating numeral, for class “A” and “B” only, which rates the extinguishing potential of the extinguisher. See tables 3 and 4.

R 408.10813. Classes of fire; type and contents of extinguisher.

Rule 813. (1) An extinguisher shall be selected and provided for protection against a specific class or classes of fire in accordance with table 1.

(2) Table 1 reads as follows:

**Table 1**

HAZARD	EXTINGUISHER TYPE AND CONTENTS
Class “A” fire	<del>Soda and acid</del> , Foam, loaded stream, multipurpose dry chemical, pressure-operated water, water pump tanks.
Class “B” fire	Carbon dioxide, dry chemical, foam, loaded stream, multipurpose dry chemical, bromotrifluoromethane.
Class “C” fire	Carbon dioxide with plastic horn only, dry chemical, multipurpose dry chemical, bromotrifluoromethane.
Class “D” fire	Extinguishing agent listed for use on a specific combustible metal hazard.
<b>Class “K” fire</b>	<b>Potassium acetate, potassium carbonate, potassium citrate, or a combination of these chemicals mixed with water.</b>

(3) Soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water-type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent shall be removed from service on the effective date of this part.

R 408.10822. Class “A” extinguishers.

Rule 822. (1) The number of class “A” fire extinguishers required shall be in accordance with table 3.

(2) Travel distance to the nearest extinguisher shall not be more than 75 feet.

(3) A class “A” extinguisher shall be provided for a combustible building, interior finish and contents having class “A” fire potential in accordance with table 3.

(4) A combustible building having an occupancy hazard subject to class “B” or “C” fires shall have the required class “A” extinguishers in addition to class “B” or “C” extinguishers except that if the fire extinguisher has more than 1 letter classification, it may be considered to satisfy the requirements of both classifications.

(5) A class “A” extinguisher shall be located on the same floor as the hazard.

(6) A floor area of a building less than that specified in table 3 shall have at least 1 class “A” extinguisher of the minimum size.

(7) The requirements of table 3 may be fulfilled by extinguishers of lower ratings whose numerical ratings are equal to or exceed the minimum rating for the area specified, except that an extinguisher with a rating of less than “2A” shall not be acceptable.

(8) Protection requirements shall be considered fulfilled if extinguishers of a higher rating are provided and the travel distance does not exceed 75 feet.

(9) Within a location where an approved automatic sprinkler system is provided, the square feet area limitation prescribed in table 3 shall not apply for the protection requirements of class “A” extinguishers. The 75 feet travel distance to an extinguisher shall not be exceeded.

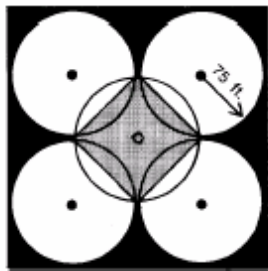
(10) The employer may use uniformly spaced standpipe and hose systems or sprinkler system hose stations where installed for emergency use by employees instead of class “A” portable fire extinguishers if such systems meet the requirements as prescribed in general industry safety standard, Part 9. Fixed Fire Equipment, being R 408.10921 to R 408.10937. ~~of the Michigan Administrative Code.~~

(11) Table 3 reads as follows:

**Table 3**

	LIGHT (LOW) HAZARD OCCUPANCY	ORDINARY (MODERATE) HAZARD OCCUPANCY	EXTRA (HIGH) HAZARD OCCUPANCY
Minimum rated Single extinguisher	2-A	2-A	4-A*
Maximum floor area per unit of A	3,000 sq. ft.	1,500 sq. ft.	1,000 sq. ft.
Maximum floor area for extinguisher	11,250 sq. ft.**	11,250 sq. ft.**	11,250 sq. ft.**
Maximum travel Distance extinguisher	75 ft.	75 ft.	75 ft.

\*Two 2 1/2 gal. (9.46 L) water type extinguishers can be used to fulfill the requirements of one 4-a rated extinguisher.



The dotted square shows the maximum area (11,250 sq. ft.) (1,045 sq. m.) that an extinguisher can protect within the limits of the 75-ft. (22.7 m) radius.

#### **R 408.10826. Class “K” extinguishers.**

**Rule 826. (1) A class ‘K’ extinguisher shall be provided for hazards where there is a potential for fires involving combustible vegetable or animal oils and fats.**

**(2) A placard shall be conspicuously placed near the extinguisher that states that the fire protection system shall be activated before using the fire extinguisher.**

**(3) A class “K” extinguisher shall be maintained within 30 feet (9.15 m) from the hazards.**

(4) Class "K" fire extinguishers manufactured after January 1, 2002, shall not be equipped with "extended wand-type" discharge devices.

(5) Existing dry chemical extinguishers without a Class "K" listing that were installed for the protection of Class "K" hazards shall be replaced with an extinguisher having Class "K" listing when the dry chemical extinguishers become due for either a 6-year maintenance or hydrostatic test.

R 408.10833. Installation.

Rule 833. (1) An extinguisher shall be installed securely on a hanger, in a bracket or mounted in a cabinet unless it is wheeled type or cart mounted. A means shall be used to indicate the location of an extinguisher mounted in a cabinet or on a shelf. The extinguisher shall be placed so that the operating instructions face outward.

(2) An extinguisher having a gross weight of not more than 40 pounds shall be installed so that the top is not more than 5 feet above the floor. An extinguisher having a gross weight of more than 40 pounds, except a wheeled type or cart mounted extinguisher, shall be installed so that the top is not more than 3 1/2 feet above the floor. An extinguisher, except a wheeled type or cart mounted extinguisher, shall be installed so that the bottom is not less than 4 inches from the floor.

(3) An extinguisher shall be suitable for use within a temperature range of not less than plus 40 degrees to plus 120 degrees Fahrenheit. An extinguisher installed at a location subjected to temperature extremes shall be of a type listed for the temperature to which it will be exposed or shall be placed in an enclosure capable of maintaining the temperature.

R 408.10836. Testing.

Rule 836. (1) An extinguisher shall receive an approved hydrostatic test every 5 years, except for dry chemical extinguishers with brazed brass, aluminum, or mild steel shells; bromotrifluoromethane extinguishers; and dry powder extinguishers for metal fires, which shall be tested every 12 years. The hydrostatic test date shall be recorded on a suitable metallized decal or equally durable material which has been affixed by a heatless process to the shell of the extinguisher and which shows the date of the test, test pressure, and the name of the person or agency making the test. An extinguisher tested after July 5, 1974, shall have a label which will not retain its original condition when removal from an extinguisher is attempted. An extinguisher manufactured under the United States department of transportation specifications incorporated in subrule (2) of this rule may have the inspection date and the serviceman's or firm's name, initials, or symbol stamped into the cylinder.

(2) An extinguisher, cylinder, or cartridge used for storage of a compressed gas, manufactured as prescribed by United States department of transportation specifications, shall be hydrostatically tested in accordance with the United States department of transportation regulations prescribed in 49 C.F.R. Part 179 to 190, **(1978), 2004 edition**, which are incorporated herein by reference. ~~and are available for inspection at the Lansing office of the department of consumer and industry services. A copy of these regulations may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from the Michigan Department of Consumer and Industry Services, State Secondary Complex, 7150 Harris Drive, Box 30643, Lansing, Michigan 48909, at a cost of \$4.25.~~

(3) A nitrogen cylinder or other cylinder for inert gas, such as ~~found~~ on a wheeled extinguisher, shall be tested at not less than 5 year intervals.

(4) The hose and couplings on an extinguisher equipped with a shut-off nozzle at the outlet end of the hose shall have a hydrostatic test interval prescribed for the unit on which the hose is installed.

(5) A dry chemical and dry powder hose assembly requiring a hydrostatic test shall be at a test pressure of 300 pounds per square inch for 1 minute. A carbon dioxide hose assembly requiring a hydrostatic test shall be at a test pressure of 1,250 pounds per square inch for 1 minute. Such hoses shall be tested within a protective cage.

(6) An extinguisher subjected to an original factory test pressure of 350 pounds per square inch or more shall be tested at 75% of the factory test pressure, but not less than 300 pounds per square inch (see table 5).

(7) Table 5 reads as follows:

Table 5  
Hydrostatic Test Pressure Requirements – Non-ICC Shells  
Shells Not Specified in U.S. Department of Transportation Regulations  
**(formerly Interstate Commerce Commission)**

EXTINGUISHER TYPE	ORIGINAL FACTORY TEST PRESSURE	REQUIRES HYDROSTATIC TEST PRESSURE
All Dry Chemical and Dry Powder	400 psi or greater	75% of factory test pressure
	350-399 psi	300 psi
	below 350 psi	75% of factory test pressure
Foam – 500 psi factory test	500	375
Foam – 350 psi factory test	350	300
<b>Soda-Acid – 500 psi factory test</b>	<b>500</b>	<b>375</b>
<b>Soda-Acid – 350 psi factory test</b>	<b>350</b>	<b>300</b>
Stored-Pressure or Cartridge-Operated Water-Type (including Anti-Freeze and Loaded-Stream)	400 psi or greater	75% of factory test pressure
	350-399 psi	300 psi
	below 350	75% of factory test pressure